

WE CLAIM:

1. A method of obtaining a combined data frame in DHO (Diversity Hand-Off) from a plurality of data frames each having at least one payload sequence, the at least one payload sequence from the plurality of data frames collectively comprising at least one group of corresponding payload sequences with each group of corresponding payload sequences comprising a corresponding payload sequence from each at least one payload sequence, each corresponding payload sequence having associated with the corresponding payload sequence a respective at least one quality indicator, the method comprising:

for each group of corresponding payload sequences:

defining a bit sequence for each corresponding payload sequence in the group of corresponding payload sequences, the bit sequence comprising the respective at least one quality indicator associated with the corresponding payload sequence, each quality indicator of the respective at least one quality indicator comprising one or more consecutive bits within the bit sequence; and

selecting, as a payload sequence for the combined data frame, a payload sequence of the group of corresponding payload sequences on the basis of the bit sequences of the group of corresponding payload sequences.

25 2. A method according to claim 1 wherein for each of the plurality of data frames, the at least one payload sequence comprises a plurality of payload sequences, and wherein the at least one group of corresponding payload sequences comprises a plurality of groups of corresponding payload sequences.

30 3. A method according to claim 1 wherein for each corresponding payload sequence of each group of corresponding

payload sequences the respective at least one quality indicator comprises a respective plurality of quality indicators.

4. A method according to claim 3 wherein each of the plurality of data frames comprises a QE (Quality Estimate) for
5 the data frame and a CRCI (Cyclic Redundancy Code Indicator) for each payload sequence and wherein for the bit sequence defined for each payload sequence, the respective plurality of quality indicators comprises the CRCI for the payload sequence and the QE of a data frame, of the plurality of data frames,
10 having the payload sequence.

5. A method according to claim 4 wherein the defined bit sequence of each payload sequence comprises at least one most significant bit corresponding to the CRCI.

6. A method according to claim 1 wherein for each group
15 of corresponding payload sequences the selecting, as a payload sequence for the combined data frame, a payload sequence of the group of corresponding payload sequences on the basis of the bit sequences of the group of corresponding payload sequences comprises:

20 determining which bit sequence of the bit sequences of each corresponding payload sequence of the group of corresponding payload sequences has a minimum value; and

selecting as a payload sequence for the combined data frame a payload sequence from the group of corresponding
25 payload sequences corresponding to the bit sequence of the bit sequences of each corresponding payload sequence of the group of corresponding payload sequences having the minimum value.

7. A method according to claim 1 wherein the plurality of data frames comprises two data frames.

8. A method according to claim 7 wherein the two data frames comprise a received data frame and an existing combined data frame.

9. A method according to claim 8 comprising:

5 responsive to receiving a data frame which is a first
data frame being received and having the at least one payload
sequence, each payload sequence having associated with the
payload sequence the respective at least one quality indicator:

for each payload sequence of the at least one payload
10 sequence of the first data frame:

storing the payload sequence of the at least one payload sequence of the first data frame as a payload sequence for the combined data frame;

defining a bit sequence for the payload
15 sequence of the at least one payload sequence of the first data frame, the bit sequence for the payload sequence of the at least one payload sequence of the first data frame comprising the respective at least one quality indicator associated with the payload sequence of the at least one payload sequence of
20 the first data frame; and

storing the bit sequence for the payload sequence of the at least one payload sequence of the first data frame as a bit sequence for the combined data frame

10. A method according to claim 8 comprising:

25 storing at least one payload sequence of a "dummy"
data frame and for each payload sequence of the "dummy" data
frame storing a bit sequence indicating poor quality as a bit
sequence for the combined data frame.

11. A method according to claim 9 wherein for each payload sequence of the "dummy" data frame the storing a bit sequence indicating poor quality comprises storing a bit sequence which is a sequence of ones.

5 12. A method according to claim 6 wherein each of the plurality of data frames has associated with the data frame a respective frame number and wherein for each group of corresponding payload sequences the bit sequence defined for each payload sequence in the group of corresponding payload 10 sequences comprises the respective frame number of a data frame of the plurality of data frames having the payload sequence, the respective frame number comprising at least one least significant bit within the bit sequence, the method comprising:

for each group of corresponding payload sequences of 15 the at least one group of corresponding payload sequences:

identifying a data frame of the plurality of data frames from the frame number within the bit sequence having the minimum value.

13. A method according to claim 6 wherein for each group 20 of corresponding payload sequences the selecting as a payload sequence for the combined data frame a payload sequence from the group of corresponding payload sequences corresponding to the bit sequence of the bit sequences of the group of corresponding payload sequences having the minimum value 25 comprises:

applying a vector minimum instruction to the bit sequences of the group of corresponding payload sequences.

14. A method according to claim 1 comprising:

responsive to receiving a data frame of the plurality 30 of data frames:

parsing the data frame using a look up in a combination of a CAM (Content Addressable Memory) and a RAM (Random Accessible Memory) to obtain profile information on the data frame for extracting the at least one payload sequence of
5 the data frame from the data frame.

15. A method according to claim 1 implemented in software.

16. A method according to claim 1 implemented in hardware.

10 17. An apparatus for obtaining a combined data frame in DHO (Diversity Hand-Off) from a plurality of data frames each having at least one payload sequence, the at least one payload sequence from each data frame collectively comprising at least one group of corresponding payload sequences with each group of
15 corresponding payload sequences comprising a corresponding payload sequence from each at least one payload sequence, each corresponding payload sequence having associated with the corresponding payload sequence a respective at least one quality indicator, the apparatus comprising:

20 a memory; and

a processor adapted to:

for each group of corresponding payload sequences:

define and store in the memory a bit sequence for each corresponding payload sequence in the group
25 of corresponding payload sequences, the bit sequence comprising the respective at least one quality indicator associated with the corresponding payload sequence, each quality indicator of the respective at least one quality indicator comprising one or more consecutive bits within the bit sequence; and

select, as a payload sequence for the combined data frame, a payload sequence of the group of corresponding payload sequences on the basis of the bit sequences of the group of corresponding payload sequences
5 stored in the memory.

18. An apparatus according to claim 17 wherein for each of the plurality of data frames, the at least one payload sequence comprises a plurality of payload sequences, and wherein the at least one group of corresponding payload
10 sequences comprises a plurality of groups of corresponding payload sequences.

19. An apparatus according to claim 17 wherein for each for each corresponding payload sequence of each group of corresponding payload sequences the respective at least one
15 quality indicator comprises a respective plurality of quality indicators.

20. An apparatus according to claim 17 wherein the processor implements a state machine.

21. An apparatus according to claim 19 wherein each data frame of the plurality of data frames comprises a QE (Quality Estimate) for the data frame and a CRCI (Cyclic Redundancy Code Indicator) for each payload sequence and wherein for the bit sequence defined for each payload sequence, the respective plurality of quality indicators comprises the CRCI for the
25 payload sequence and the QE of a data frame, of the plurality of data frames, having the payload sequence.

22. An apparatus according to claim 21 wherein the bit sequence defined for each payload sequence comprises at least one most significant bit corresponding to the CRCI for the
30 payload sequence.

23. An apparatus according to claim 17 wherein for each group of corresponding payload sequences, in selecting, as a payload sequence for the combined data frame, a payload sequence of the group of corresponding payload sequences on the 5 basis of the bit sequences of the group of corresponding payload sequences, the BSGC is further adapted to:

determine which bit sequence of the bit sequences of each corresponding payload sequence of the group of corresponding payload sequences has a minimum value; and

10 select as a payload sequence for the combined data frame a payload sequence from the group of corresponding payload sequences corresponding to the bit sequence of the bit sequences of each corresponding payload sequence of the group of corresponding payload sequences having the minimum value.

15 24. An apparatus according to claim 17 wherein the plurality of data frames comprises two data frames.

25. A method according to claim 24 wherein the two data frames comprise a received data frame and an existing combined data frame.

20 26. A method according to claim 25 wherein the processor is further adapted to:

responsive to receiving a data frame which is a first data frame being received and having the at least one payload sequence, each payload sequence having associated with it the 25 respective at least one quality indicator:

for each payload sequence of the at least one payload sequence of the first data frame:

store the payload sequence of the at least one payload sequence of the first data frame as a payload sequence for the combined data frame;

define a bit sequence for the payload
5 sequence of the at least one payload sequence of the first data frame, the bit sequence for the payload sequence of the at least one payload sequence of the first data frame comprising the respective at least one quality indicator associated with the payload sequence of the at least one payload sequence of
10 the first data frame; and

store the bit sequence for the payload sequence of the at least one payload sequence of the first data frame as a bit sequence for the combined data frame.

27. A method according to claim 25 wherein the processor
15 is adapted to:

store at least one payload sequence of a "dummy" data frame and for each payload sequence of the "dummy" data frame store a bit sequence indicating poor quality as a bit sequence for the combined data frame.

20 28. An apparatus according to claim 27 wherein for each payload sequence of the "dummy" data frame the bit sequence indicating poor quality comprises a bit sequence which is a sequence of ones.

25 29. An apparatus according to claim 23 wherein each of the plurality of data frames has associated with it a respective frame number and wherein for each group of corresponding payload sequences the bit sequence defined for each payload sequence in the group of corresponding payload sequences comprises the respective frame number of a data frame
30 of the plurality of data frames having the payload sequence, the respective frame number comprising at least one least

significant bit within the bit sequence, the apparatus being adapted to:

for each group of corresponding payload sequences of the at least one group of corresponding payload sequences:

5 identify a data frame of the plurality of data frames from the frame number within the bit sequence having the minimum value.

30. An apparatus according to claim 23 wherein for each group of corresponding payload sequences, in selecting, as a 10 payload sequence for the combined data frame, a payload sequence from the group of corresponding payload sequences corresponding to the bit sequence of the bit sequences of the group of corresponding payload sequences having the minimum value, the processor is adapted to:

15 apply a vector minimum instruction to the bit sequences of the group of corresponding payload sequences stored in the memory.

31. A parsing engine comprising the apparatus of claim 17 and comprising:

20 at least one processor and at least one memory, the at least one processor comprising said processor and the at least one memory comprising said memory, at least one the at least one processor being adapted to:

responsive to receiving a data frame of the plurality 25 of data frames:

parse the data frame being received using a look up in at least one of the at least one memory to obtain profile information on the data frame being received for extracting the

at least one payload sequence of the data frame being received from the data frame being received.

32. A parsing engine according to claim 31 wherein each of the at least one processor of the parsing engine implements 5 a state machine.

33. A parsing engine according to claim 32 wherein the at least one memory of the parsing engine comprises at least one CAM (Content Addressable Memory) and at least one RAM (Random Accessible Memory).